



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

plasticity of the mammal infant as opposed to the highly developed instinctive equipment of other young; the maternal care, instruction and example during the period of helplessness, and the very gradual attainment of the activities of self-maintenance in conditions in which social activities are absolutely essential. All this stock of the development theory is available to confirm this view.

And to finish where we began, all this is through that wonderful engine of development, consciousness. For consciousness is the avenue of all social influences.—J. MARK BALDWIN, Princeton.

The preceding communication from Prof. Baldwin is copied from *Science* of August 23, 1895. It is reprinted in order to render intelligible a review of it which I propose to publish in the next number of the *NATURALIST*.—E. D. COPE.

ANTHROPOLOGY.¹

Mercer's Cave Explorations in Yucatan.²—This a handsomely illustrated volume which describes in detail the researches made by the Corwith Expedition to Yucatan, under the direction of Mr. H. C. Mercer of the University of Pennsylvania. The object of the expedition was to search for the remains of prehistoric man in the cave deposits, and to learn who were the predecessors or ancestors of the peoples whose civilization is attested by the remarkable ruins which are such a conspicuous feature of that country. Explorations of this kind made in Europe have achieved such important results to archeology, that every research in America must be watched with great interest. As a summary of his work, Mr. Mercer remarks:

"The intervening two months seemed a long time; nor was it easy to realize that, after all, the area gone over had not exceeded one hundred miles in length by ten in breadth. Twenty-nine caves had been visited in sixty days, of which ten had been excavated. Thirteen had archeological significance. Six had yielded valuable, and three, decisive results.

"We had seen but little of the ruins. We had not passed southward over the boundary line into the great wilderness, whence fables of lost cities reach the traveller's ear. Our continued study of an un-

¹ This department is edited by H. C. Mercer, University of Pennsylvania.

² *The Hill Caves of Yucatan: A Search for the Evidence of Man's Antiquity in Central America*; being an account of the Corwith Expedition of the Department of Archeology and Paleontology of the University of Pennsylvania, by Henry C. Mercer. J. B. Lippincott & Co. Philadelphia, 1896. 8vo., pp. 183.

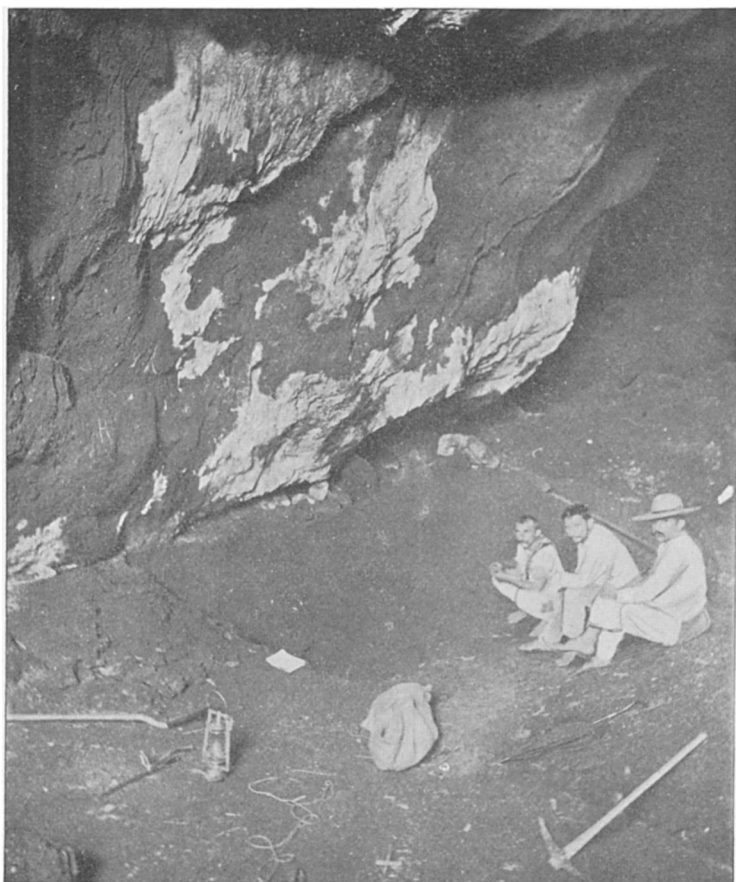
derground layer of human refuse substantially the same in all the caves, instructive as it was, had taught us but little of details. Evidently a wide range of tools and implements had not been left, lost or broken in the subterranean rooms. We did not find, and did not expect to find, that the water producing underground chambers had been used as burying places. Neither were they dwellings, but rather temporary halting spots, which, but for the water supply, would probably have shown fewer human traces than do the caves of the United States. Human bones scattered in the rubbish indicated that the old inhabitants of Yucatan practiced cannibalism. Beyond that, the traces of pre-Columbian cookery at the underground sites referred to an ancient cave visitor, who was rather an agriculturist than a hunter, and who (unless the dog found at Sabaka be an exception) possessed no domestic animals.

"We had learned little of stone chipping, and had found in the scanty list of stone blades but one imperfect point that might have served for an arrowhead. The secret of stone carving we had failed to discover, and though the whole mystery had seemed within our grasp at Oxkintok, we had to rest content with proving that the chiselling of the ruins could not have been done with chips of the parent block or round hammer stones. We had found no copper, or gold, or silver, no jade, no gums, no preserved grains, no cloth, no apparatus for weaving, and had discovered no pipe, and learned nothing of pre-Columbian smoking or tobacco.

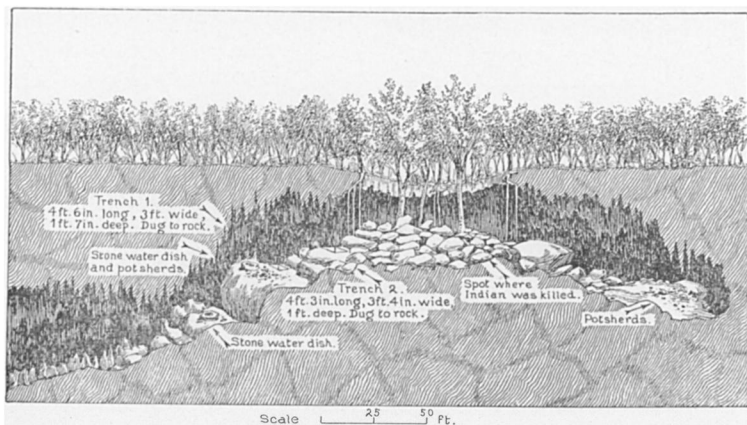
"A close examination of the potsherds showed a ware mixed with powdered limestone that reacted strongly under acid on the fractures. A smooth red make, strong, wellbaked, and symmetrical, and whose dull polished surface resisted the action of nitric acid, was abundant, while a very few fragments were decorated with brightly colored designs, though their polish, after the manner of varnish, yielded readily to the acid test. Many, though better baked than the ware of the Delaware Indians, were coarse. A very common hard variety had been striped with brown lines on a white or bluish background. But there was nothing brilliant or striking about these fragments of dishes, cooking pots, or water jars. Few were ornamented, and only two or three highly so. None were marked with hieroglyphs. Nevertheless, a variety of tones, colors, and polish struck the eye when many sherds were laid side by side and brushed.

"But results more important than these had rewarded our close examination of the position and contents of the human rubbish heap everywhere present in the caves. Though this layer was the only cul-

PLATE VI.



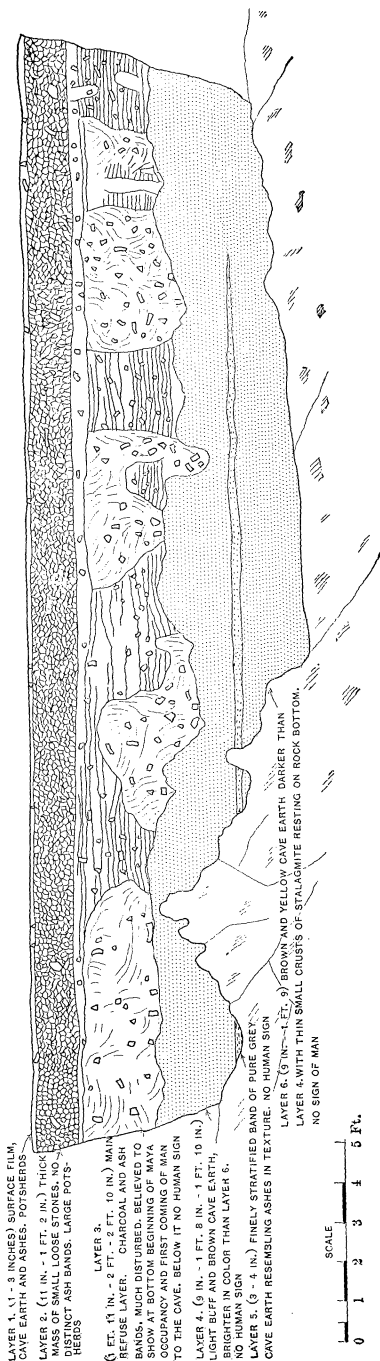
I



2

1. Cave of Sayab Actun, interior. 2. Section of Cave of Actun Xmak.

PLATE VII.



Section of Cave of Lotun.

ture layer, our digging had fairly proved at Oxkintok, Loltun and Sabaka, and though we had often failed to reach rock bottom at other caverns, there was nowhere ground for supposing that deeper digging or blasting would have upset our inference. An earlier people visiting Yucatan under its present topographical conditions must needs have left their trace in the caves, and because the undisturbed earth beneath the culture layer discovered, always failed to show trace of any deeper, older or more primitive human visitor, the conclusion was that no such earlier people had seen the region while its stony hills, its torrid plain, and its damp caves were as they now are."

The evidence secured by Mr. Mercer justifies this conclusion so far as it goes. To prove that a human population existed in Yucatan prior to that whose remains were actually found, it will be necessary to discover another series of deposits inside or out of an older type of caves. No such caves were found, and while it cannot be asserted that such will not be found, it is evident that they must be very rare if existing in the region explored. The case of Yucatan may prove to be similar to that of the United States, where I have shown on paleontologic grounds,³ that cave deposits of two different ages exist. The remains of vertebrate life found in the caves of Yucatan explored by Mr. Mercer, are those of the existing fauna of the country, and the deposits correspond, therefore, with those of the second (postchamplain) age of the northern caves. Caves of prechamplain age are rare in the United States, as shown by Mr. Mercer's earlier researches, having been probably removed by the action of water during the Champlain submergence. That such a submergence may have also taken place in Yucatan is indicated by the recent researches of Spencer; but if so, a cleaner sweep of them was made than was the case in North America.

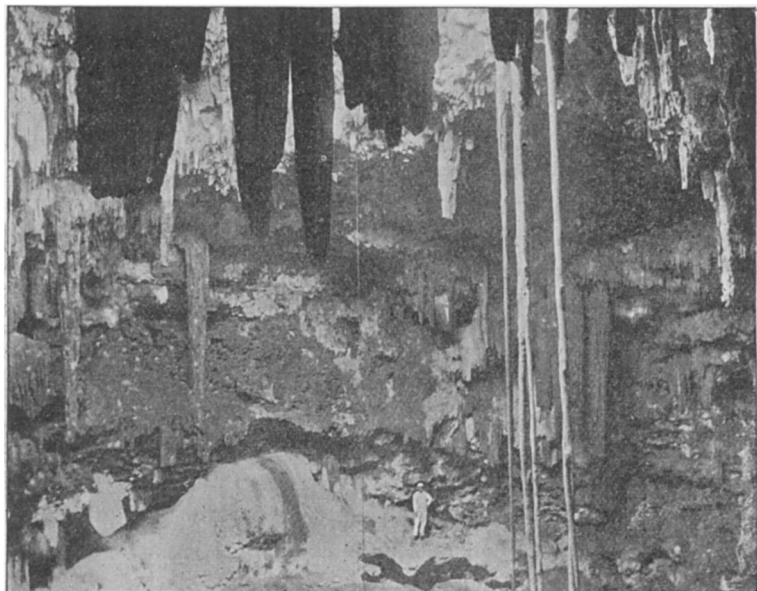
Among the remains of animals which were discovered, those of the horse occurred in two caves, and the dog in one. It is probable they both belong to the domesticated species.

I append some examples of the very admirable illustrations with which the book abounds.

Apart from its scientific value, this book will interest the general reader for various reasons. It is written in a pleasant style, and many side lights are thrown on the characters of the country and people. That the exploration was not without the element of danger is shown by the tragic death of one of the natives; while the sufferings of the

³ American Naturalist, 1895, p. 598.

party from heat and insects show that none but hardy explorers could undertake such labor. We recommend the book as an admirable ex-



Interior of grand rotunda of Cave of Actun Benado.

ample of the combination of utility with adventure which characterizes scientific research in the wilds.—E. D. COPE.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Academy of Science of St. Louis.—President Gray in the chair and twenty-two other persons present, Mr. Trelease exhibited several specimens, about three feet square, of a curious silk tapestry, taken from the ceiling of a corn-storing loft in San Luis Potosi, Mexico, by Dr. Francis Eschauzier, stating that he was informed that the larger specimen had been cut from a continuous sheet over twenty yards wide and about four times as long. The specimens, of a nearly white color, and of much the appearance and feeling of a soft tanned piece of sheepskin, were shown to be composed of myriads of fine silken threads, crossing and recrossing at every conceivable angle, and so producing a seemingly homogeneous texture. Although specimens of the creatures by which they are produced had not been secured, it was stated that there

was no doubt that these tapestries are the work of lepidopterous larvæ which feed upon grain, the presumption being that they are made by the larvæ of what has been called the Mediterranean Grain or Flour Moth (*Ephestia kühniella*). The speaker briefly reviewed the history of this insect and its injuriousness in various parts of the world, and quoted from a report of Dr. Bryce, showing that in Canada, where it became established in 1889, "a large warehouse, some 25 feet wide, 75 feet long, and four stories high, became literally alive with moths in the short course of six months."—WILLIAM TRELEASE.

Boston Society of Natural History.—February 5th.—The following paper was read: Mr. Herbert Lyon Jones, "Biological adaptations of desert plants to their surroundings."—SAMUEL HENSHAW, *Secretary*.

Nova Scotian Institute of Science.—13th of January.—The following papers were read: "Notes on the Superficial Geology of Kings County, Nova Scotia," by Prof. A. E. Coldwell, M. A., Acadia College. "A Note on Newton's Third Law of Motion," by Prof. Mac Gregor, D. Sc., F. R. SS. E. & C., Dalhousie College.—HARRY PIER, *Secretary*.

New York Academy of Science, Biological Section.—January 13th, 1896.—The papers presented were: G. S. Huntington on "*The Visceral Anatomy of the Edentates*." The characters of the brain, alimentary, respiratory and genito-urinary tracts were especially considered. The following forms were discussed: *Myrmecophaga jubata*, *Tamandua bivitata*, *Arctopithecus didactylus*, *Dasyurus sexcinctus*, *Tatusia novemcincta*, *Manis longicaudata*. In the brain characters the following features were considered;—the transverse frontal sulcus, the great longitudinal fissure, and the absence of a distinct Sylvian fissure. In the alimentary tract the Sloths are to be sharply separated from the remaining groups, the stomach structure with its pyloric gizzard notably aberrant: the ileo-colic junction is traced throughout the edentates in a well marked series of transitional forms.

O. S. Strong, "*On the Use of Formalin in Injecting Media*." The paper made especial note of the advantages possessed by this preservative in injecting the brain *in situ*. Formalin (40 per cent formaldehyde) diluted with an equal volume of water is injected into the cephalic vessels until it runs from the cut jugulars. After a few minutes the same quantity is again injected and once or twice again after an elapse of fifteen to twenty minutes. The brain is then removed and will be found to be completely fixed throughout. The swelling usually

noticed in formalin hardened brains does not appear to take place when this method is employed. Besides the many general advantage of fixing brains by injection, formalin has the especially merit of giving them the best consistency for macroscopic work, and further such brains are available subsequently for the Golgi and Weigert methods as well as, possibly, for cytological methods. Formalin has also the advantage that it can be used, as above, stronger than is necessary for fixation and thus allowance made for its dilution when permeating the tissue. When only the Golgi method is to be used, an equal volume of a 10 per cent solution of potassium bichromate may be added to the formalin instead of water. Pieces can be subsequently removed, hardened further in formalin-bichromate and impregnated with silver.

Bashford Dean, "*On the Supposed Kinship of the Paleospondylus.*" A favorably preserved specimen of this interesting fossil, received by the writer from Wm. T. Kinnear of Forss, Scotland, appears to warrant the belief that this lamprey-like form was possessed fins, a character decidedly adverse to the now widely accepted view of Marsipobranchian affinities. The structure referred to consists of a series of transversely directed rays, arising from the region of the postoccipital plates of Traquair. From this peculiar character, as well as from many unlamprey-like features of the fossil, it would appear accordingly that the kinship of the Paleospondylus is as yet by no means definitely determined.—C. L. BRISTOL, *Secretary*.

Nebraska Academy of Sciences.—The following program of papers was presented. *First Session—Thursday, Jan. 2, 1896.* "America the Primitive Home of Civilization," H. S. Clason; "The Home of the Buffalo Grass," Dr. C. E. Bessey; "Early Rainfall Records in Nebraska," G. D. Swezey; "The Volcanic Ashes of Nebraska," Dr. E. H. Barbour. *Second Session—Friday, Jan. 3.*—"The Relative Importance of Economic Fungi, East and West," F. W. Card; "Animal Parasites of Nebraska," Dr. H. B. Ward; "Diatomaceous Deposits of Nebraska," Dr. E. H. Barbour; "Some Fossil Diatoms from Nebraska," C. J. Elmore; "Wind Velocities in Nebraska," G. A. Loveland; "Report of Progress on the Study of *Dæmonelix*," Dr. E. H. Barbour; "Origin of the Present Flora of Nebraska," Dr. C. E. Bessey.